



2003 AFCEE Technology Transfer Workshop

San Antonio, Texas

Promoting Readiness through Environmental Stewardship

“Managing Cleanup Performance In a Changing Environment”

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Performance Based Cleanup

Cleanup Coordination and Communication

- Community Outreach
- Public Participation
- Public Stakeholders
- State Organization
- Federal Facilities

SVE System Performance

EDIATION EFFECTIVENESS EVALUATION

Cleanup Planning

- Exit Strategies
- Ramp Down
- PC CSM
- Exit Strategy
- Ramp Down
- PC CSM

Cleanup Performance

- 5-Year Review
- PPR/OPS
- Performance Tracking
- IC's/ LUCs

Cleanup Improvement

- Optimization and Technology
- Development and Insertions
- Privatization Initiatives
- New Contracting Approaches

New Cleanup Standards

- Emerging Issues
- New Goals
- Protectiveness Initiatives
- New Goals
- Protectiveness Approaches

Cleanup Closure

- Regulatory Closeout Documentation

Cleanup Closure Training/ Incentives

- Training
- ITRC Incentives
- ITRC Training

Property Transfer

- Fed to Fed
 - Universal Site Acceptance Criterion
- Fed to Non-Fed
 - OPS
 - Land Use Changes
- Emerging Issues
 - Brownfields
 - Superfund Redevelopment Initiative
 - Privatization

Quality Data/Information Retention/ Knowledge Management

Post Construction Complete And Long-Term Management

Cleanup Coordination and Communication

- Community Outreach
- Public Participation
- Public Stakeholders
- State Organization
- Federal Facilities

Cleanup Planning

- Exit Strategies
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- PC CSM

Cleanup Performance

- 5-Year Review
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Cleanup Improvement

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- New Goals
- Protectiveness

Cleanup Closure

- Regulatory Closeout Documentation

Cleanup Closure Training/ Incentives

- Training

Decision Document

Property Transfer

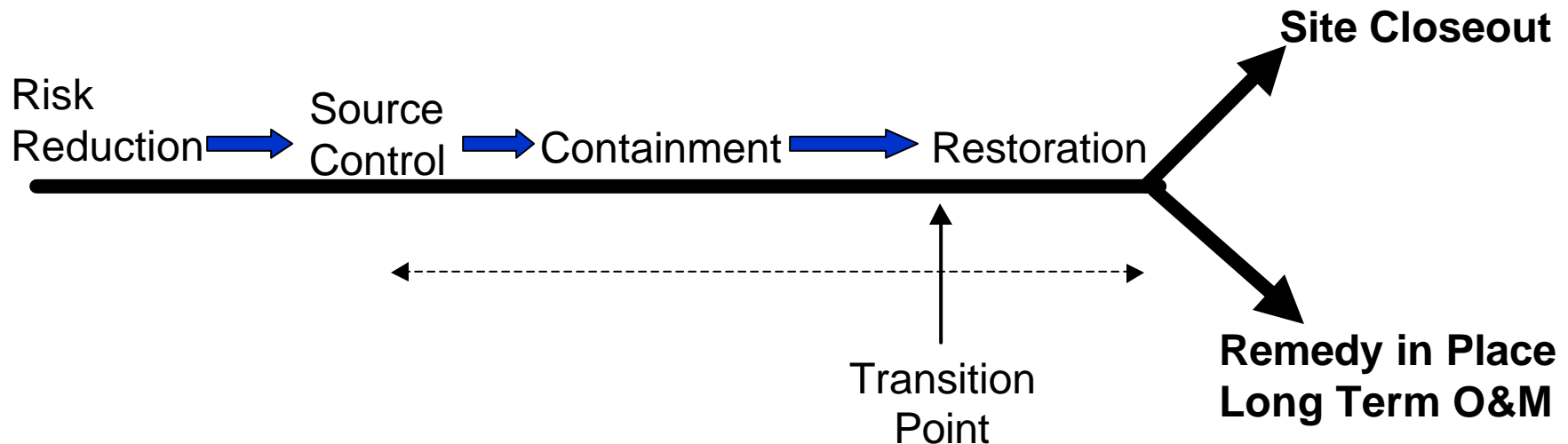
- Fed to Fed
 - Universal Site Acceptance Criterion
- Fed to Non-Fed
 - OPS
 - Land Use Changes

Quality Data/Information Retention/ Knowledge Management



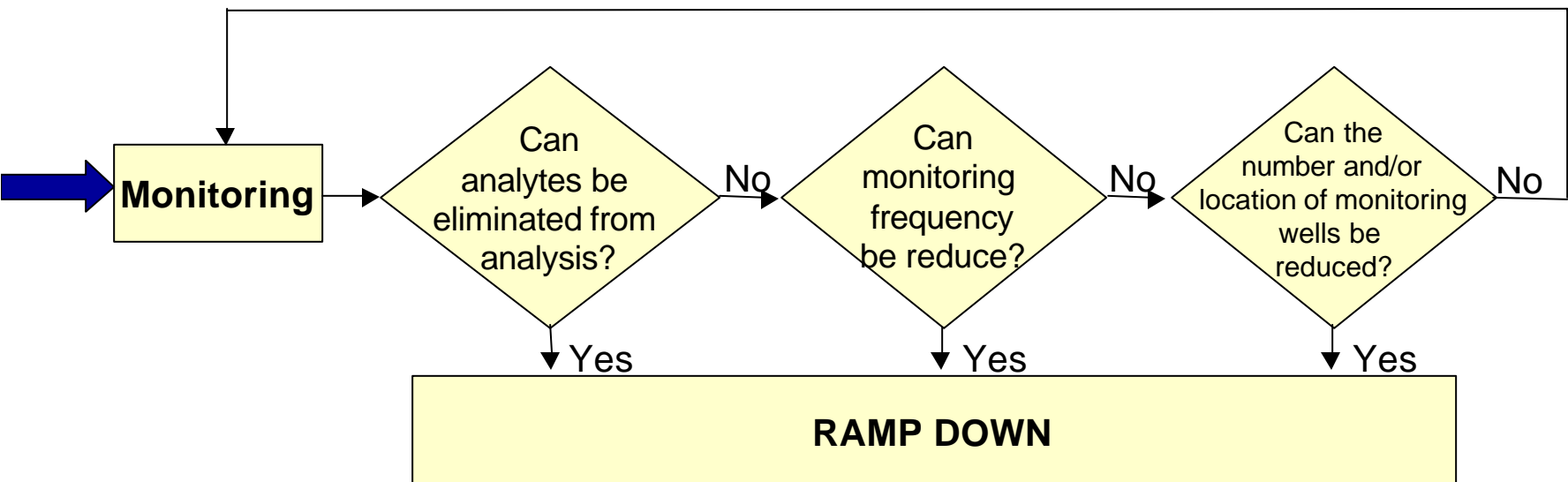
Cleanup Planning: Completion Strategies

**An completion strategy should establish
the criteria for making future decision**





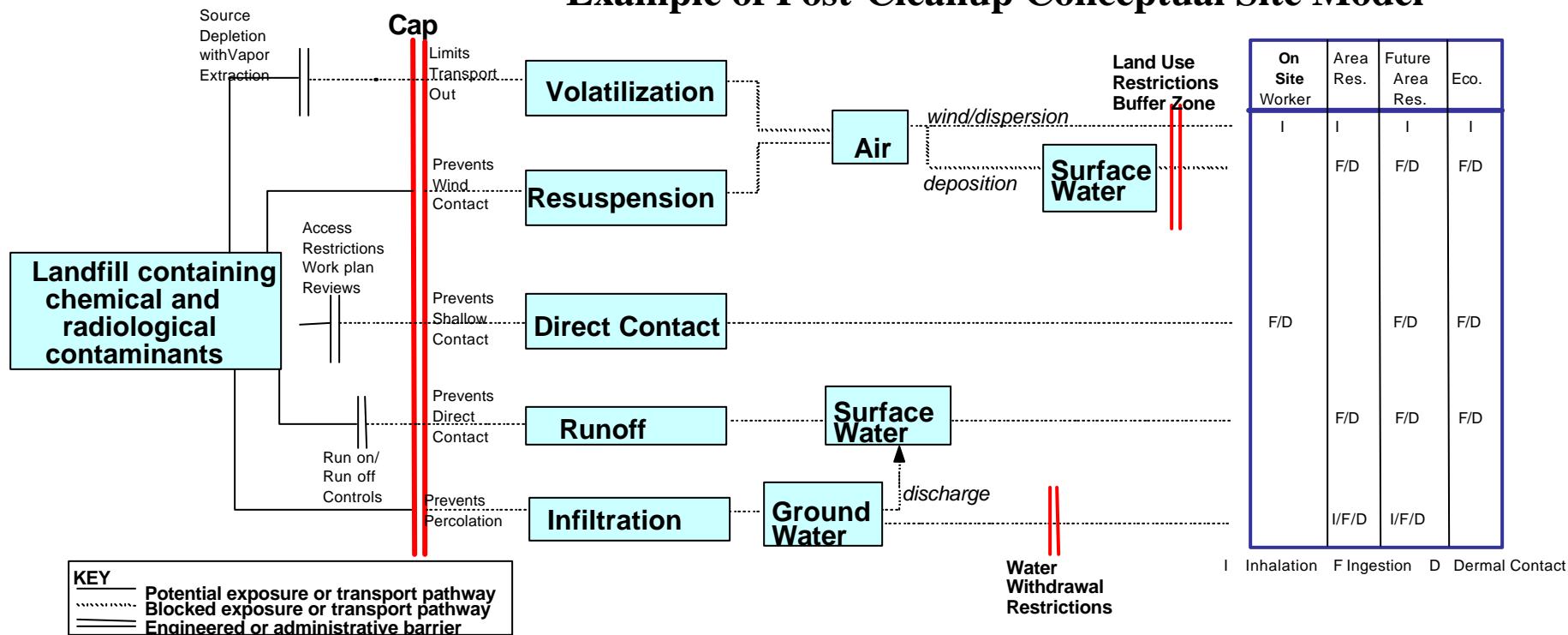
Cleanup Planning: Ramp Down Strategy





Cleanup Planning: Post-Cleanup Conceptual Site Model

Example of Post-Cleanup Conceptual Site Model



Components of End State	Description
Waste Characteristics	One landfill remains on site. Contaminants include: NO, CHCL ₃ , DCE, Toluene and DCA. The estimated volume of material disposed in the landfill is 420,000 based on historical records and knowledge of past practices.
Unit Characteristics	Landfill is approximately 50 - 60 feet above the upper aquifer & approximately 80 ft. above the lower HSU of the groundwater aquifer. The contaminants detected in the upper HSU include: CHCl ₃ , DCE, Toluene, H ₂ and C ₆ H ₆ . Contaminants detected in lower HSU include: Cr, NO, CHCl ₃ , DCE, Toluene, H ₂ and DCA.
Barriers in Place	One single-layer cap with a design life of 30 years covers the landfill. Vapor extraction system installed & operated until concentrations drop below threshold. Land use restriction covenants in place such that: There can be no digging in the landfill area; and There shall be no agriculture or residential use of groundwater; pumping groundwater from wells is prohibited.
Key Assumptions to Maintain Protectiveness	Land use will remain industrial. Monitored natural attenuation will demonstrate that contaminants in the groundwater are below MCLs in 20 years. Remaining contaminants in landfill are will not continue to leach to the groundwater. An alternate water supply is provided to local residents.



Cleanup Performance

• Performance Reviews

- EPA is developing a system to access remedial system information at sites all over the country by contaminant type or cleanup objectives. AF does **not** have an equivalent system.
- Working with EPA to analyze DOD five-year reviews to determine possible trends in remedial system performance and protectiveness (i.e., is a particular remedy being found “not protective” in a large number of reviews?)

• PPR / OPS

- Developing preliminary OPS timelines for each installation.



Cleanup Performance

- **Performance Tracking**
- **IC'S/ LUCs**
 - Air Force will maintain a database that contains
 - Relevant information on the property;
 - Types of controls established;
 - Air Force land use monitoring and management responsibilities; and
 - Location of real estate records.

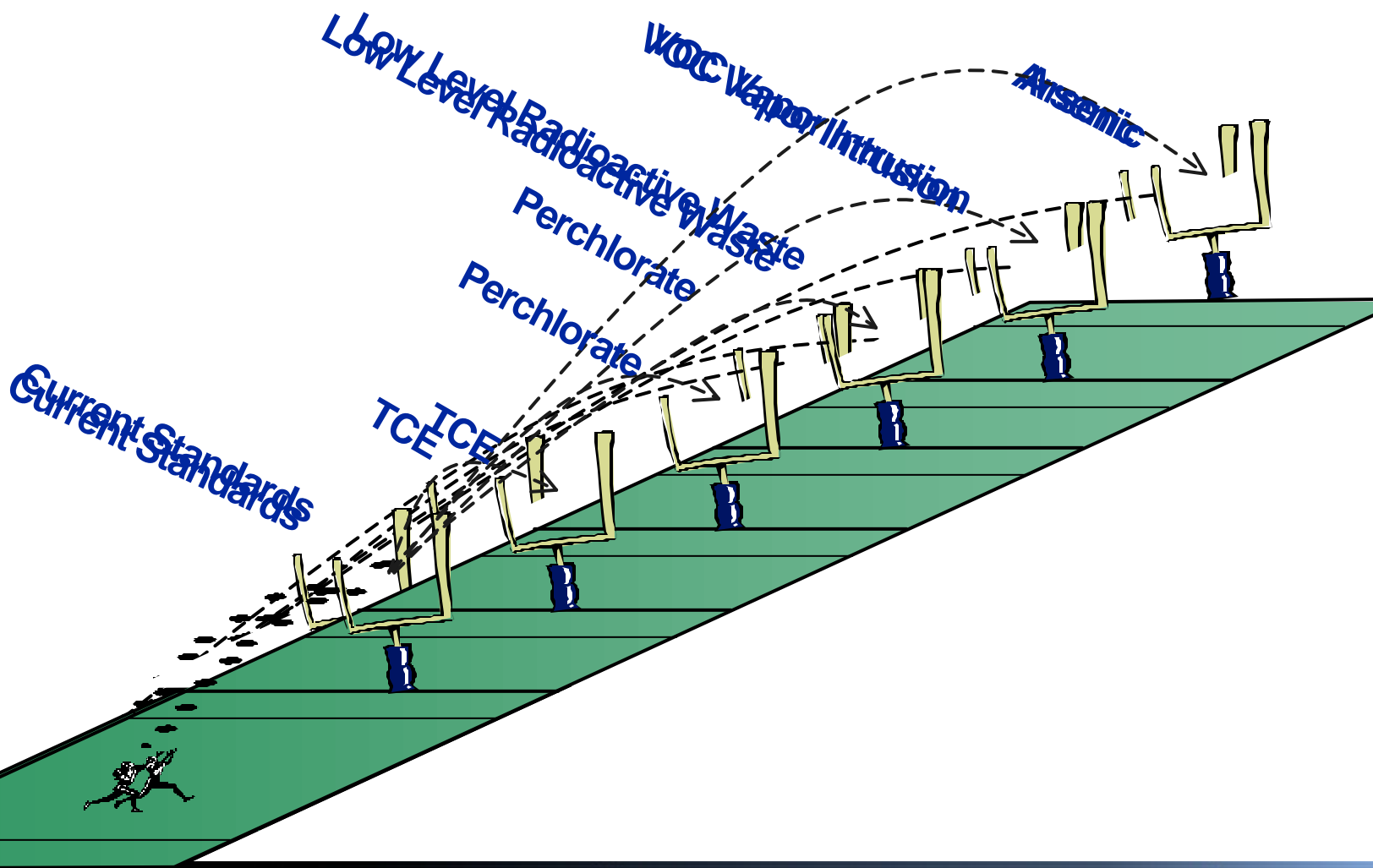


Integrating Cleanup Performance Monitoring w/ Process

- **Groundwater Remediation Fact Sheets**
 - **Developed in conjunction with DOE-EM & ITRC.**
 - **Principles contained in the fact sheets were developed with EPA**
 - **Effort Leverages other Federal Agency Work**
 - **Identifies Cleanup Completion, 5 yr Review, OPS and Optimization opportunities by technology**



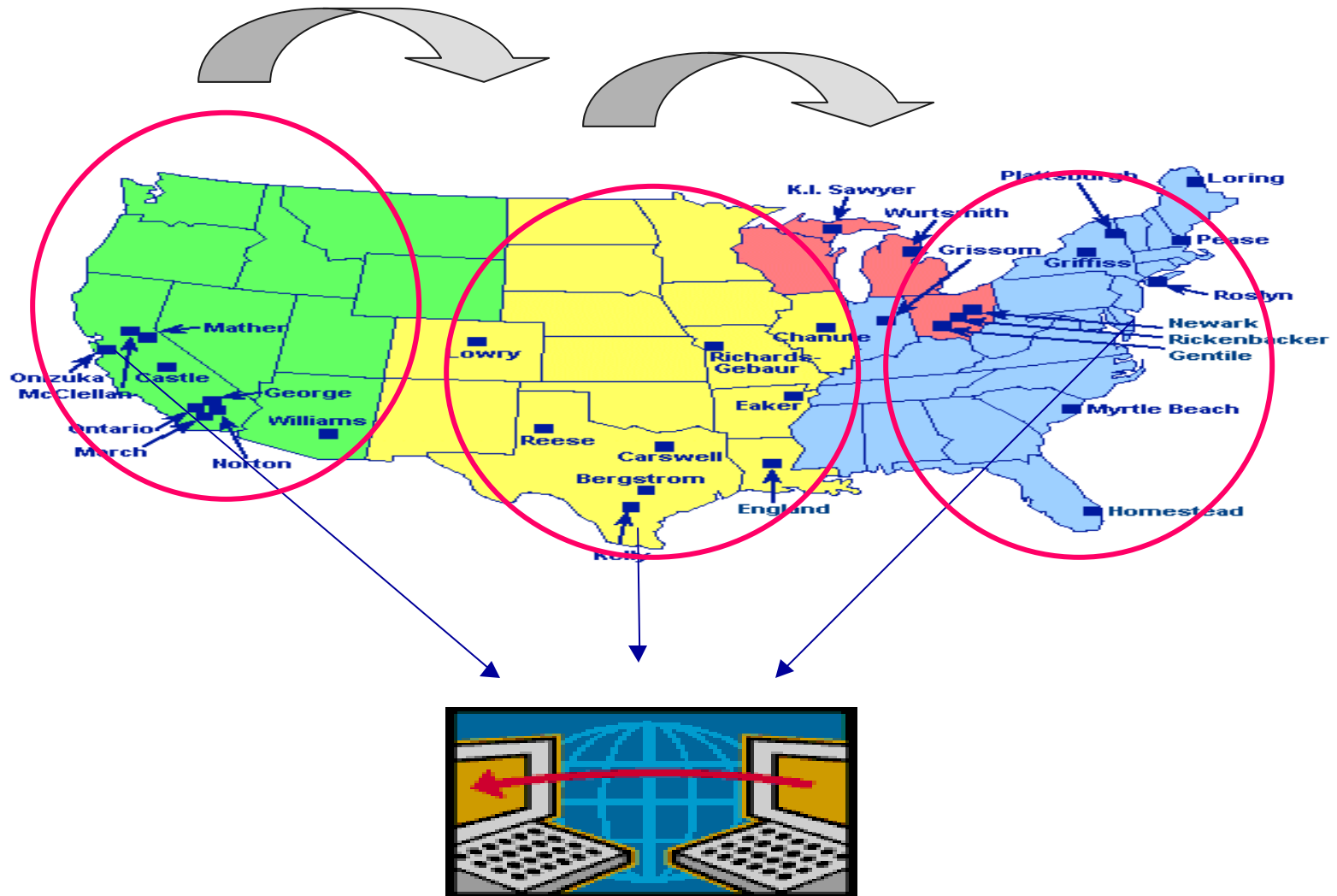
New Cleanup Standards: Emerging Issues



Promoting Readiness through Environmental Stewardship



Performance Monitoring System: Knowledge Management



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